AMENDMENTS TO THE SPECIFICATION

Please replace the paragraph **[0006]** on page 4 with the following:

[0006] Gap cross-flow is often observed with bluff bodied vehicles having towing configurations, such as tractor-trailer arrangements (e.g. having one or more trailers), auto-trailer arrangements, and locomotives, among others. Taking the representative case of a conventional tractor-trailer arrangement, the gap between the tractor and the trailer enables pivoting of one relative to the other. Figures 1-4 illustrate such a tractor-trailer arrangement, generally indicated at reference character 100, having a tractor 101 as the leading portion and a single trailer 103 as the trailing portion hitched to and towed by the tractor 101. It is appreciated, however, that conventional tractor-trailer arrangements also include an additional trailer hitched to the first trailer (~~not shown~~ see for example Figure 7). In any case, the tractor 101 has a cab portion 102 and a substantially vertical and rear-facing base surface 108. And the trailer 103 has an elongated construction with a front end 104 and a rear end 105. The front end 104 has a forward facing front surface 109 and the rear end 105 has a rear facing base surface 112, with the front surface 109 of the trailer 103 facing the base surface 108 of the tractor 101. A gap 106 is formed between the tractor 101 and the trailer 103, and in particular, between the tractor base surface 108 and the trailer front surface 109.

Please replace the paragraph **[0007]** on page 5 with the following:

[0007] When placed in a flowstream, such as 107 in Figure 1, i.e. when the tractor-trailer 100 is in forward motion, the airflow of the flowstream ideally separates off of the tractor 101 and completely reattaches downstream onto the trailer ~~101~~ 103. As shown in ~~Figure 2~~ Figures 2 and 3, however, airflow separating from the tractor 101 enters the gap 106 to form a recirculation zone defined by a vortical flow structure 110 which is similar to a vortical ring or an inverted-U shape. A stable vortical flow structure 110 (i.e. one which cannot be forced out of the gap) prevents the surrounding airflow of the flowstream from further entering the gap and thus redirects the surrounding airflow to reattach with the side of the trailer. An unsteadiness in the flow field surrounding the gap, however, can produce a pressure differential in a transverse direction across the gap which can destabilize the vortical flow structure 110 and increase aerodynamic drag. Figure 4 shows an example of a cross-flow stream 111 completely traversing an empty gap 106 from one side of the tractor-trailer to the other side, through opposing first and second open ends 123 and 124. In this extreme case, the vortical structures would be eliminated altogether by the cross-flow stream 111. However, even small amounts of cross-flow present a compromise in the ability of the vortical structure to prevent airflow from further entering the gap, and can thereby increase the aerodynamic drag on the tractor-trailer 100.

Please replace the paragraph **[0008]** on page 6 with the following:

[0008] Various methods have been introduced to address this problem of recirculation zone destabilization. One example is shown in U.S. Pat. No. 3,971,586 directed to a drag reducer for land vehicles~~, with Figures 1 and 2 thereof reproduced as Figures 5 and 6 of the present application~~. As shown in Figures 1 and 2 of the '586 patent, ~~In particular,~~ the drag reducer is a stabilizer plate 23, mounted on a forward panel 17 of a trailer 16 and extending into a gap 24 in attempting to stabilize vortices 28 and 29 formed in the gap. The stabilizer plate, however, only partially closes the gap, which is an imperfect situation since some air will be forced from one of the divided vortex regions to the other by pressure differences therebetween. By having such an opening through the gap a cross-flow is allowed to form, especially under side wind conditions, which can disturb the vortical structures to adversely impact aerodynamic drag.

Please replace the paragraph **[0009]** on page 6 with the following:

[0009] U.S. Pat. No. 4,021,069 also shows an apparatus for reducing aerodynamic drag which is for mounting on the bluff, forward face of the trailing element of an over the road vehicle. As can be seen from Figure 1 and 2 of the '069 patent, the apparatus is a fairing element mounted at an upper region of the forward face, so as to provide deflection of an impinging air stream. As shown by Figure 1 in particular, the gap between the tractor and trailer remains substantially unblocked for preventing a cross-flow therethrough.

Please replace the paragraph **[0019]** on page 9 with the following:

[0019] Figure 5 is a side view of ~~a prior art drag reducer of a type described in U.S. Pat. No. 3,971,586 mounted only to the trailer~~ a conventional tractor-trailer arrangement having a single trailer, and using a baffle assembly (shown generically) of the present invention.

Please replace the paragraph **[0020]** on page 9 with the following:

[0020] Figure 6 is ~~a top view of the prior art drag reducer shown in~~ a perspective view of the baffle assembly of Figure 5.

Please replace the paragraph **[0021]** on page 9 with the following:

[0021] Figure 7 is ~~a side view of a first exemplary embodiment of a baffle assembly of the present invention used in a conventional tractor-trailer arrangement~~ a side view of a conventional tractor-trailer arrangement having two trailers and using two of baffle assemblies (shown generically) of the present invention.

Please replace the paragraph **[0022]** on page 9 with the following:

[0022] Figure 8 is a top view of ~~the~~ a first exemplary embodiment of the baffle assembly of ~~Figure 7~~ of the present invention comprising a single panel baffle assembly with spring mounts.

Please replace the paragraph **[0029]** on page 11 with the following:

[0029] Turning now to the drawings, Figures ~~7 and 8~~ 5 and 6 generally show ~~an exemplary first embodiment of~~ the aerodynamic drag reduction apparatus of the present invention, comprising a baffle assembly 200 mounted to the conventional tractor-trailer arrangement 100 of Figure 1-4 in a manner which spans the width of the gap 106. In particular, the baffle assembly 200 has a ~~single~~ thin vertical panel configuration ~~200~~ spanning the gap 106 between the cab portion 102 of the tractor 101 and the trailer 103, and is mounted in an orthogonal direction to both the base surface 108 of the tractor 101 and the front surface 109 of the trailer 103. In this manner, the vertical panel 200 completely partitions the gap 106 into two recirculation zones 205 and 207 which support independent vortical structures 206 and 208, respectively. The two recirculation zones 205, 207 are shown substantially equal in volume, and the associated two vortical structures 206, 208 are also shown substantially equal in size and magnitude, due to the central location of the vertical panel 200 in the gap 106. It is appreciated, however, that off-center locations of the vertical panel 200 would also produce independent vortical structures substantially impervious to cross-flow therebetween.

Please replace the paragraph **[0030]** on page 11 with the following:

[0030] Figure 8 shows a first preferred embodiment of the baffle assembly, indicated at 200', having a single thin vertical panel configuration. As shown in ~~Figures 7 and~~ Figure 8, a plurality of spring or otherwise resiliently-biasing suspension mounts 203

and 204 are used to connect a first end 201 of the vertical panel ~~200~~ 200' to the base surface 108 and a second end 202 to the front surface 109. The spring suspension mounts 203, 204 enable automatic adjustment of the span of the baffle assembly to adapt to variations in gap width caused by pivoting of the tractor 101 about the pivot axis 125 relative to the trailer 103. By providing such a means for automatic span adjustment, there is no longer a need to maintain a clearance between the baffle assembly and either the base surface of the tractor or the front surface of the trailer. This ability to automatically adjust to a variable gap width permits the baffle assembly to be mounted to both the tractor 101 and the trailer 103 spanning the entire width of the gap, so as to prevent or at least substantially impede any cross-flow from passing through the gap 106. And in turn, the vortical structures formed in the recirculation zones can remain relatively stable, resulting in a net reduction in the aerodynamic drag.

Please replace the paragraph **[0036]** on page 14 with the following:

[0036] It is appreciated that the various components of the baffle assembly may be mounted and connected to each other and the tractor-trailer using suitable mounting hardware (not shown), such as for example bolts, screws, ties, clamps, suspension wire, etc. And it is also notable that when, as shown in Figure 7, an optional second trailer is hitched behind the first trailer 103, a vortical flow structure similar to 110 shown in Figure 2 is likely to exist in the second gap 116 between the two trailers 103 and 113. And mounting a baffle assembly, such as the vertical panel 400 (similar to

baffle assembly 200 between tractor 101 and first trailer 103) in the gap 116 would likewise produce similar drag reduction benefits.